

Commentary on **Mitigation or Adaptation: Which is a much-expected procedure to tending Zambian Urban Climate Change challenges?**

Kalanga Pemphe Philimon

Public concern about climate change is rising. The number and impacts of climate-driven disasters in Zambian urban places is increasing and spreading annually. Cities are already facing exaggerated urban heat island effects due to extreme temperatures, property damage and outbreaks of diseases due to water flooding in the unplanned settlement.

It is a rear scenario to talk about Climate Change without encountering these two words: **Mitigation and Adaptation**, for these are the fundamental response strategies to addressing climate change (UN, 1992). While mitigation tries to prevent or gradual down the increase of GHG concentration in the atmosphere by means of restricting current and future emissions and improving capacity sinks for GHG (NPCC, 2016), adaptation seeks to adjust Natural or human systems in reaction to real or expected stimuli or their outcomes, which moderates harm or make the most beneficial possibilities (IPCC, 2001). An example of a mitigation measure is mind-set-change from our overly dependence on fossil fuels for energy use (cooking) in homes to renewable forms of energy which achieves a no net carbon emissions. In Zambia, much of the energy is sourced from charcoal and wood (NPCC, 2016) and there seem to be a well collaborated complicity between the rural charcoal producers and the urban charcoal consumers in challenging the whole effort of dramatically cutting down emissions. Adaptation, on the other hand, has to do with understanding that from now on, we are living in a changed environment and therefore we need to change our way of living. In other words, adaptation refers to modifications in techniques, practices, or systems to moderate or offset ability damages or to take gain of opportunities related to changes in weather.



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The impacts of climate change may be felt worse in cities and towns than could be experienced in rural setting. This is so because cities are Focused centers of populace and monetary activities, and any effect or disruption, has the capability to have an effect on great numbers of people. An example is given on how the COVID-19 pandemic stoke quickly as a disaster and caused massive economic and social disruption and the most affected areas were those in cities. With a projection that more than half of mankind will be living in urban zones by 2050 (UN-Habitat, 2018) and with the pervasive threats of climate change; adaptation and mitigation is becoming a prime issue. The question however is, in the case of Zambian cities, which strategy is needed profoundly than the other to address climate change challenges? Historically, more attention has been devoted to mitigation (Cohen et al. 1998). This may be attributed to the circumstance that climate change in the western world appeared as a trouble related to the lengthy-term disturbance of the climate system due to industrialization characterized by the progressive mechanization and concentration of production methods, which began first in Great Britain in the textile factories (Stumpf et al, 2002). And since most of the knowledge and science that we use to attend to climate change concerns in Zambian have at the most general level come down to us from the very western world and this has made our response to the issues of climate change as a country sorely based on mitigation strategies implored by the western world. This doesn't mean that our friends in the western world are not using the adaptation strategy as a response to climate change, as a matter of fact most cities in the western world are already adapted to the challenges of climate change as their built infrastructure are more climate trade evidence with green and blue infrastructure commanding the construction sector (Gagnon-Lebrun & Agrawala, 2006). Blue and Green Infrastructure, as an all-encompassing terminology, is narrowly connected to the conception of "Green Infrastructure" – a landscaping development model that is connected to other planning notions such as green-ways and environmental networks. The western world escalated emissions and from the very industrial activities which ensured maximum production of goods and services, has led them to develop in terms of infrastructure.

After the Inter-governmental Panel on Climate Change's Third Assessment Report, thoughtfulness to issues of adaptation started receiving much attention (IPCC, 2001). The report further suggested that adaptation had the potential to reduce adverse effects of climate change and could produce immediate ancillary benefits, but will not prevent all damages. Zambia may do well in addressing urban climate change issues by focusing more on adaptation as a response measure. Preference to adaptation here does not rule out mitigation as both these are two sides of a coin and a broad and integrated approaches, which include both mitigation and adaptation strategies and the synergies between them, are important in fully addressing this challenge (Neeraj et al., 2009). Let us now look at the possible reasons as to why we need to make haste on adaptation than mitigation;

First, even if the impacts of climate change we are facing now are as a result of the historical emissions, our cities are already troubled with the current climate hazards like extreme temperatures and increased precipitation patterns with their subsequent potential impacts of flooding, property damage, exaggerated urban heat island effect (UN-Habitat, 2014). An experienced increase in temperatures and converting precipitation patterns are answerable for the expansion of the disease vector habitats. For example, in Zambia sicknesses like malaria are spreading to regions wherein they were now not popular before. The outbreaks of bilharzia have also been said in the course of past floods, whilst illnesses like cholera, typhoid and dysentery have reached a pandemic proportion within the face of weather exchange (NPCC, 2016). Other impacts of climate change include exaggerated heating of cities due to replacement of natural land cover with dense concentrations of pavements. Flooding and its

subsequent disruption of normal living and destruction of property is another challenge being felt as of current because of climate change. Zambian Capital City Lusaka and other cities have never been spared from such impacts and in fact Flooding in unplanned and informal settlements in Lusaka is predicted, even in years of ordinary rainfall (Ntchito, 2007). Chipata City has also lately been experiencing incidences of flooding resulting from heavy rainfall. In 2017, thirty houses were Flooded and family items really worth thousands and thousands of kwacha destroyed in Chipata's Old Jim compound (Lusaka Times: 18th January, 2017). The swept away houses were built in the flood prone areas with no proper drainage system to clear storm water in the neighborhood. The damage to infrastructure is further aggravated because most housing in the City especially in informal settlements are not made to the standards vital to withstand the climate incidences being felt and most of these housing are built on dangerous sites, Where the family has little understanding of the disaster dangers, they face and have limited decisions to protect themselves (JIDP, 2021). Because these housing are built with compromised materials and without building permission, they easily develop holes, cracks, peeling paint and leaking roofs, a state that presents a potential harm to the health and physical well-being of its inhabitants and neighbors. In 2021 houses were washed away in Mthira Nsembe Compound of Chipata city due to strong waters that passed through the City residence from hills without a proper run off system (Chipata District Disaster Preparedness Report to DMMU, 2021). These impacts are current and require immediate response, making adaptation a priority strategy to tackle climate change in Zambian cities.

Second, at the same time as the consequences of mitigation may also take several a long time to show up, maximum adaptation activities take impact almost immediately. For instance, most poor urban areas and unplanned settlements face the challenge of floods due to poor or no drainage systems which are Accountable for quick eliminating storm water runoff from urban regions to avert flooding. Drainage constructions as an adaptation measure will bring relief to affected communities almost immediately, unlike mitigation measures which will take considerable time to have an effect on the communities. Third, the efficiency of mitigation is dependent on actions of others as the atmosphere is shared globally, whereas adaptation measures are contextual and take effect in a setting and what adaptation procedures need to be engaged, is very much decided via the particular occasions and precise impacts that every circle of relatives, each community, each city and each country is experiencing. Further, however much forceful our mitigation measures are or regardless of the mitigation strategy chosen, we're certain to stand a degree of weather alternate and its related negative impacts due to historic emissions and the inertia of the climate system (IPCC 2001). In this case, adaptation as a response strategy is inevitable to protect livelihoods in many unplanned urban settlements which are the most vulnerable. It is in this line that as much as we receive massive support through the clean development mechanism, we should exploit the opportunity to address issues of climate change adaptation of cities. Even as we develop now, we should be slowly stretching a distance in moving away from grey infrastructure in preference of green or blue infrastructure in order to adapt in a climate compatible development. The truth remains though, that answering to the intricate problems presented by climate change in cities is not mechanically done in categories in terms of mitigation or adaptation. By and large, broad and integrated approaches, which include both mitigation and adaptation strategies and the synergies between them, are important in fully addressing climate change issues. Adaptation is a vital strategy in any respect scales to complement weather exchange mitigation efforts. Together they can make a contribution to sustainable development objectives (IPCC, 2001).

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